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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/039,219	01/02/2002	Chun-Chi Ke	56843 (71987)	2017
21874	7590	06/29/2004	EXAMINER	
EDWARDS & ANGELL, LLP			NGUYEN, DILINH P	
P.O. BOX 55874			ART UNIT	
BOSTON, MA 02205			PAPER NUMBER	
			2814	

DATE MAILED: 06/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/039,219	Applicant(s) KE ET AL.	
	Examiner DiLinh Nguyen	Art Unit 2814	

-- **The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3 and 4 is/are rejected.
- 7) ☒ Claim(s) 2 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kitaoka et al. (U.S. Pat. 5523608) in view of Mizue et al. (U.S. Pat. 6315465).

Kitaoka et al. disclose a semiconductor device (fig. 1, column 3, lines 45 et seq.) comprising:

a lead frame having a first side and a second side, and formed with a die pad 7 and a plurality of leads surrounding the die pad, wherein the leads are each defined into an inner lead 3, an outer lead 4 and a middle portion positioned between the inner lead and the outer lead;

an encapsulant 8 for encapsulating the lead frame with the outer leads being exposed, wherein a cavity is formed in the encapsulant for exposing the die pad and the inner leads on the first side of the lead frame, allowing a semiconductor chip 1 and bonding wires 5 to be received in the cavity and a resin compound that forms the encapsulant on the exposed die pad and the inner leads;

the semiconductor chip 1 mounted in the cavity on the die pad of the first side of the lead frame;

bonding wires 5 formed in the cavity for electrically connecting the semiconductor chip to the inner leads of the lead frame; and

a lid 11 adhered onto the encapsulant for covering an opening of the cavity.

Kitaoka et al. fail to disclose each of the middle portions extends outwardly at sides thereof to form protrusions.

Mizue et al. disclose a semiconductor device (fig. 3) comprising:

a lead frame, wherein the leads are each defined into an inner lead, an outer lead and a middle portion positioned between the inner lead and the outer lead, and each of the middle portions extends outwardly at sides thereof to form protrusions for reducing spacing between the adjacent middle portions of the leads. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Kitaoka et al. to maintain the stability and reliability for the semiconductor device, as shown by Mizue et al.

3. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitaoka et al. (U.S. Pat. 5523608) in view of Mizue et al. (U.S. Pat. 6315465) and further in view of Waki et al. (U.S. Pat. 5479051).

Kitaoka et al. and Mizue et al. fail to disclose a first tape adhered to the second side of the lead frame and a second tape adhered to the first side of the lead frame.

Waki et al. disclose a semiconductor device (figs. 3A and 7A) comprising:

a tape 12 adhered to the first side of the lead frame in a manner free of interference with arrangement of the bonding wires (fig. 3A, column 4, lines 14-22) and plurality of tapes 22a and 22b adhered to the second side of the lead frame (fig. 7A).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Kitaoka et al. and Mizue et al. to increase the quality and reliability for the lead frame, as shown by Waki et al.

Allowable Subject Matter

Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

In response to applicant's argument that there is no obvious to combine the references, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re*

Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case: Mizue et al. disclose a semiconductor device (fig. 3) comprising:

a lead frame, wherein the leads are each defined into an inner lead, an outer lead and a middle portion positioned between the inner lead and the outer lead, and each of the middle portions extends outwardly at sides thereof to form protrusions for reducing spacing between the adjacent middle portions of the leads. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Kitaoka et al. to maintain the stability and reliability for the semiconductor device, as shown by Mizue et al.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., reduction of spacing between adjacent leads with slows resin flow during molding and the stated range allows resin flow to slow down in speed during molding, which reduces the area available for forming a resin flash, so as to prevent the occurrence of resin flashes) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

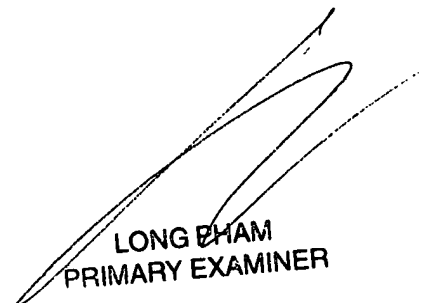
TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DiLinh Nguyen whose telephone number is (571) 272-1712. The examiner can normally be reached on 8:00AM - 6:00PM (M-F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (571) 272-1705. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DLN



LONG PHAM
PRIMARY EXAMINER